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## First Glimpses of South American Vegetation.

By THOMAS MORONG.

A voyage of seventy days may seem in these days of steam an age, but if all ocean trips were distinguished by as pleasant weather as that which the writer enjoyed in the good bark *Evie J. Ray*, in crossing the Atlantic to the Rio de la Plata, everybody would wish to go to sea, no matter how long the passage. And yet we had seen so much of the "wild waste of waters," that the cry, "Land ho!" on the afternoon of October 6th was very welcome to our ears, when the Uruguayan coast came into view at the mouth of the noble estuary into which the Plate River empties. The land consists of low sand hills and beaches, apparently quite barren, or showing a scanty and stunted vegetation. On swinging across the stream to the Argentine side, one is struck with the fact that the land itself is so low that it cannot be discerned at a mile's distance from the deck of a vessel. Only a few trees, single or in scattered clumps, consisting probably of cultivated Lombardy poplars or the Ombu, the sole indigenous tree of this region, rise above the level, revealing the coast line. The land here is a part of that vast region known as the Pampas, low plains very similar to the flat prairies of Indiana and Illinois, which stretch westward unbroken for many leagues to the foot of the Andes, and southward to Patagonia.

The river, at least as far up as Buenos Aires, although a vast volume of water from 60 to 100 miles in width, is very tame and uninteresting. The water is as yellow with mud as the Potomac or the Mississippi. No plants whatever appear to grow in it. The city of Buenos Aires presents a fine front to the river, but it has no harbor, and the water is so shallow that steamships and sailing vessels are obliged to discharge their cargoes in lighters, unless they can enter the "Boca" (mouth), as it is called, the mouth of the Riachuelo, a small stream some two or three miles south of the city, which has been dredged sufficiently to admit craft drawing 20 feet of water. In fact, most of the sailing vessels are unladen here, and the little port is crowded with shipping of all nationalities.

It is now early spring, and the season corresponds with

our April, but the vegetation is much more forward than I have ever seen it in that month in the States north of Maryland. The climate more nearly approaches that of North Carolina, and is even milder, as ice and frosts seldom occur in this latitude, even in midwinter, and snow is unknown. The public gardens, of which there are a number in the city, are already gay with a mass of bloom, mostly of exotic plants. Several species of *Acacia*, brought from the northern part of the Republic, or from Paraguay, exhibit great clusters of yellow flowers. Tree mallows, as tall as one's head, and many other shrubs and herbaceous plants that I do not recognize are here, while the coco palm waves its broad fronds in the air and lends a tropical aspect to the scene. Upon the banks of the river, and on the low grounds and vacant lots in the outskirts of the city, still sodden with the recent rains, I collected a number of interesting plants, most of them quite new to me. In the pools or upon their borders abounded the *Sagittaria Montevidensis*, somewhat stouter than our *S. variabilis*, *Acicarpha tribuloides* (Ord. Calyceræ), with heads of small white flowers set on a thorny involucre, *Spergula grandiflora*, *Cerastium Commersoniana* (*C. humifusum*, Camb.), *Lepidium pubescens*, *Senecio Hualtata*, a stout composite common here in damp soils, and now in full flower, and *Ranunculus* (*Aphanostema*) *apiifolius*, a tall species of the *abortivus* group, with shining leaves. In company with these occurred several introduced species, which had a familiar home look to my eyes, such as *Ranunculus muricatus*, *Medicago denticulata*, *Lilæa* (*L. subulata*?), *Capsella Bursa-pastoris* and *Sonchus oleraceus*. *Conium maculatum*, growing rank and high, has taken possession of many of the sloughs and miry beds, and *Rumex pulcher* is common along the gutters and by the house walls. *Brassica* (*Sinapis*) *alba* is the "charlock" which invades the grain fields and cultivated grounds, as do the allied species at home. In one spot on the garden borders I picked up *Anagallis cærulea*, growing vigorously, a foot or more in height, and already in fruit, though its bright blue, yellow-eyed flowers were still abundant. A handsome *Fumaria* unknown to me, but which, as I am informed, is an introduced species, sprang up under the fences, and clambering over a thicket of small thorny

Acacias, not yet leaved-out, was a bright red, delicate *Tropæolum*,—*T. chymocarpum* (*T. pentaphyllum*, L.), and on the edges of the same thicket, in a ditch was *Tradescantia Guyanensis*, bearing delicate white flowers. The only native shrub which I found in bloom was *Cestrum Parqui*, some two or three feet in height, with light yellow tubular flowers, a member of the Order Solanaceæ.

Oddly enough, this shrub has a fancy for growing upon the roofs and projecting walls of old houses in the city. Nearly all the buildings here are square structures, one or two stories in height, made of brick or stucco, with flat roofs, of the type so common in Spanish and Italian cities. To the tiles or along the coping and roof gutters of many of these, you may see a whole wild garden clinging. Besides the *Cestrum*, which thrusts itself out horizontally over the sidewalk, I noticed various grasses, *Sonchus*, *Geraniums*, *Oxalis*, Dandelion, Shepherd's-purse, *Cerastium*, and various other herbaceous plants.

In wet grounds I came across a strange thing named *Hymenanthus Yaborosa* (*H. integrifolia*, L.), which has a long white corolla tube, with five spreading segments, the included stamens and stigma just filling the throat, around which were sprinkled honey glands for the delectation of visiting insects. This plant bears a long white root which runs just under the surface of the ground, and throws up at intervals single leaves and scapes in the manner of our *Aralia nudicaulis*. It belongs to the Order Solanaceæ. Some of the lowland pastures are densely covered with a bright blue, yellow-eyed *Sisyrinchium*, called by Grisebach (*Symb. ad. Fl. Arg.*), *S. Bonariense*? The *Sisyrinchiums* of this part of South America are very numerous, and as yet poorly defined. The same may be said of the *Solanums*, of which I saw several species, among them *S. nigrum*, var., *S. spinosissimum*, *S. bærhaavæfolium*, *S. sisymbriifolium* (so I thought it), and a species brought from the Grand Chaco territory, probably undescribed. The plant that I shall be likely to remember the longest is a nettle, very common here in waste grounds, which on first sight I took to be *Urtica dioica* or *U. gracilis*, and which I boldly grasped as I had so often done at home. It proved, however, to be a much more formidable species, armed

with numerous spines, the sting of which made my fingers tingle for hours afterwards. It is *Urtica spathulata*, which I warn all North American botanists who follow in my track to collect with gloves on their hands.

Soon after my arrival I took the cars to La Plata, a city which lies about 20 miles to the south of Buenos Aires, in order to pay a visit to the well-known botanist, Dr. Carlos Spegazzini, who was formerly connected with the University of this place, but is now a Professor in the Colegio Nacional of La Plata. Dr. Spegazzini received me with the utmost cordiality, and even left his classes in the college to escort me to his home, and accompany me back to this city. To his extensive knowledge of the local flora I am indebted for the means of identifying many of the plants mentioned in this article. In his garden, growing spontaneously, were quite a number of the wild plants common in the vicinity, such as *Erigeron Bonariense*, *Gnaphalium Americanum*, *Soliva anthemifolia*, *Soliva sessilis*, *Malva parviflora*, *Heliosciadium leptophyllum*, and *Bromus unioloides*. I also had the pleasure of getting from his grounds Herbarium specimens of a number of the rare shrubs which grow in the northern provinces of Argentina, such as *Duvaua longifolia*, *Tillandsia bicolor*, *Carica* (*Vasconella*) *quercifolia* and *Buddleia hebeflora*. Dr. Spegazzini has devoted much attention to the Fungi, Characeæ and other cryptogamous plants, and also to the Gramineæ, of which he has a large collection. He has published a number of works upon South American plants, having travelled as far South as Terra del Fuego to make observations. He is an enthusiastic botanist, and received me with a courtesy and generosity for which I cannot be too grateful.

I have also made several excursions from the city in other directions, mainly for the purpose of observing the Pampas, upon which I have for years longed to gaze. For many miles in this vicinity these plains are cultivated in villages or cattle farms, known as Estancias, and therefore cannot be seen in all their native wildness. For that one must travel from one hundred to two hundred miles, but what I can see within easy reach shows clearly the prodigious vitality and fecundity of the thistles, which, as is well known, have invaded the soil by legions,

and are so tenacious of life that it is almost impossible to subdue them. There are several varieties of these thistles. The most common is the cardoon, not yet in blossom, but in some instances beginning to form heads. This has a broad, prickly leaf, blotched and striped with white, and does not in this region grow to any great height. The gigantic Pampa thistle, *Silybum Marianum*, less numerous, but a much taller plant when full grown, is just coming into flower, which has a very pretty, bright red color. The cardoon, in some places as far as the eye can see, occupies every foot of the ground. In cleared spaces here and there I saw herds of cattle grazing, or ostriches stalking about like domestic fowls. Occasionally I saw flocks of sheep and herds of cattle which could be numbered by thousands, but neither their teeth nor their feet seemed to lessen the number of the thistles which hold possession of the ground, and increase in spite of man and beast.

Among the cultivated trees around dwelling houses and by the roadsides, was the peach, which is planted in orchards and bears well, the Lombardy poplar, the Australian *Eucalyptus*, *Robinia pseudacacia*, *Acacia Bonariensis*, popularly called the Ñapinday, *Melia Azedarach*, here known as the Tree of Paradise, *Tamarix Africana*, and *Nicotiana glauca*, called by the natives Palampalan (pronounced with a strong accent on the final syllable). The *Eucalyptus* is popularly regarded as a security against malaria, and for this reason is extensively cultivated in this region, but all the *Eucalyptus* trees in the world, combined with the "Good airs" for which this town and province are named, will not save from epidemics a city in the suburbs of which the sewerage is allowed to meander at its own wild will and to stand in green, slimy pools above ground, and the carcasses of animals left to rot where they die by the street side or in the vacant lots. My eyes and nose can testify to the fact that the germs of malaria, the cholera, the yellow and typhoid fevers, the diphtheria, and kindred scourges must find a congenial soil in the Boca and other neglected portions of this city.

The *Eucalyptus*, whether it possesses anti-malarial virtues or no, grows into a handsome and good-sized tree in this country, and when planted in masses forms a very agreeable shade for

dwelling houses. The Lombardy poplar and the locust do no better than in New England, and are scarcely worth the ground which they occupy. I would like to see the experiment tried of importing our maple into this region. The silver poplar is occasionally seen, and seems to thrive, and I know no reason why the maple might not.

The nests of several orchard birds give a peculiar aspect to the house surroundings here. Among these is the "Hornero," the "Baker" or "Oven-bird," somewhat smaller than our robin, and so called because it builds a curious, round, oven-like habitation of mud which, after the fashion of our barn swallow, it plasters over the tops of posts, stumps, the ends of broken limbs, and even on the sides of houses. I knocked off one of these ovens and found it to be roofed over, with the entrance at the side, the walls an inch in thickness, and the whole weighing not less than eight or ten pounds. It indicates a great deal of industry and perseverance on the part of this little creature to be able to carry so much mud in its bill, and no little ingenuity to construct a nest which is as round and even as though it were smoothed by the trowel of a mason. On some of the peach trees, scarcely higher than a man's head there were other nests which at first view looked like baskets of twigs. One of these, the work of a bird smaller than the Hornero and known as "El Leñateros," or "Twig-gatherer," is as large as a peck basket, made of small twigs, the ends of which are very ingeniously twisted and hooked together. I thought when I first caught a glimpse of this nest, that it must be the home of an eagle at least, and wondered how it came to be placed in the crotch of a small tree, where it looked as much out of place as a marten house would if placed upon a huckleberry bush. When closely examined it proved to be a regular twig hut, the real nest being a small cavity in the interior, the entrance to which is on the side. Frail as the structure looks, yet it can withstand the pamperos, the violent winds which frequently blow from the southeast across the pampas, and cling fast even while the slender tree is bent almost to the ground.

Around the gardens were old hedges of the Indian fig cactus and the Mexican *Agave*, which grows luxuriantly in this climate.

Specimens of the *Agave* that I saw had leaves six feet in length. I am told by residents here that this plant throws up its tall spike of flowers annually. I do not feel sure that such is the case, but at all events it must flower quite often, and little deserves the name of the "Century Plant." I am surprised that the fibrous threads into which the leaves of this plant can be split has never been utilized for making cloth or cordage. While the leaf is fresh the filaments can be pulled apart by the fingers with the utmost ease, and they are as fine as sewing cotton and wonderfully strong. With their great length they should be equal, if not superior, to hemp for working purposes, and I see not why they would not be fully as strong and flexible as the hemp fibres.

In closing this article, which is written under great difficulties, I wish to acknowledge the many courtesies extended to me by the gentlemen connected with the Public Museum, the Public Schools and the English press of this city, as well as by American residents and business men to whom I brought letters of introduction. I have already spoken of Dr. Spegazzini. I am also especially indebted to Dr. George J. Ryan, Director of the Normal School, who has greatly interested himself in my work, and to Hon. B. W. Hanna, our United States Minister, who has done all in his power to facilitate the object for which I have visited this country, and whose assistance has been of great value in my intercourse with Argentine officials.

BUENOS AIRES, Oct. 26, 1888.

### On Gyno-Diœcious Labiatæ.

Diœcious Labiatæ are not uncommon among the genera and species of the Old World. The plants are not absolutely of separate sexes, but in the one case individual plants have hermaphrodite flowers abundantly fertile, and plants wholly female through the total abortion of the anthers. So far as I know, no American species has presented this character, but European species of this class, introduced to this country, retain the peculiarity, showing that the tendency is inherited, and is not due to the accident of environment. Dr. Gray notes that this character—termed gyno-diœcious—exists here among the introduced